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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/661,306	09/13/2000	Katsuaki Abe	P19976	7749

7055 7590 09/11/2003

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RESTON, VA 20191

EXAMINER

WILLIAMS, DEMETRIA A

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 09/11/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/661,306

Applicant(s)

ABE ET AL.

Examiner

Demetria A. Williams

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,8,9 and 11-19 is/are rejected.
- 7) ☒ Claim(s) 3,6,7, and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 9, 11, 13, 15, 16, and 18 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 9, 13, 15 and 18 recite a third and fourth timing estimating means without including a first and second means, while claims 11 and 16 recite a fifth timing estimating means without including first through fourth means. Each of these claims is independent, and it is unclear whether only the listing timing estimating means are required or if these claims were meant to depend from other claims. For purposes of applying prior art, it is assumed that only the amount of timing estimating means claimed is required (i.e. claim 9 requires two timing estimating means).
3. Claims 18 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 18 and 19 are both directed to both an apparatus and a method and are thus hybrid claims. An apparatus claim should be described in terms of its structure while a method claim should be described in terms of the steps involved. The combination of both is indefinite because it does not clearly point out whether the applicant is attempting to claim an apparatus or a method. For purposes of applying prior art, references showing either the system or the method will be used.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 4, 5, 8, 14, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamada.

6. Regarding claims 1, 2, 4, 14, and 17, Yamada discloses a receiving apparatus comprising a timing estimation means which performs estimations of a received signal at the instant $-T/4$, which is shifted from the reference sampling time point T , and an estimation at the instant $+T/4$, having a phase difference from the first. A switch is used to switch between the first and second instants, which are used by a second timing estimation means for performing estimates with twice the resolution of the first estimation means (see generally column 3, lines 3-22; column 8, lines 51-57)).

7. Regarding claim 5, Yamada further discloses that interpolation is used for achieving the second timing estimation (see generally column 3, lines 3-22).

8. Regarding claim 8, Yamada discloses the receiving apparatus as described above in reference to claim 1, and further discloses transmission means performing transmission with

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sampling timing shared with the receiving portion and thus having phase synchronization (see generally column 2, lines 60-65).

9. Claims 9, 15, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by W. Chen et al ("WChen"). WChen discloses a reception apparatus comprising estimating the timing of a received signal at a predetermined sampling rate and another timing estimation means for performing a correlation of the previous timing estimate and a known signal (see generally column 12, lines 9-40).

10. Claims 11-13, 16, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by X. Chen et al ("XChen").

11. Regarding claims 11, 16, and 19, XChen discloses a reception apparatus comprising means for storing tap coefficients for removing inter-symbol interference, a filter for filtering the received signal, and timing estimating means for performing a timing estimation based on the filtering results (see generally column 3, line 55 - column 4, line 7; column 6, line 39 - column 8, line 25).

12. Regarding claim 12, XChen further discloses demodulating the received data using the timing estimates (see generally column 7, lines 3-15).

13. Regarding claim 13, XChen discloses a reception apparatus comprising estimating the timing of a received signal at a predetermined sampling rate and another timing estimation means for performing a correlation of the previous timing estimate and a known signal (see generally column 4, lines 13-21), means for storing tap coefficients for removing inter-symbol interference, and a filter for filtering the received signal (see generally column 3, line 55 - column 4, line 7; column 6, line 39 - column 8, line 25).

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Allowable Subject Matter

14. Claims 3, 6, 7, and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

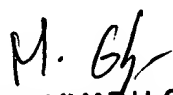
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Demetria A. Williams whose telephone number is (703) 305-4078. The examiner can normally be reached on Monday - Friday, 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (703) 306-3034. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800.

daw


MOHAMMAD H. GHAYOUR
PRIMARY EXAMINER